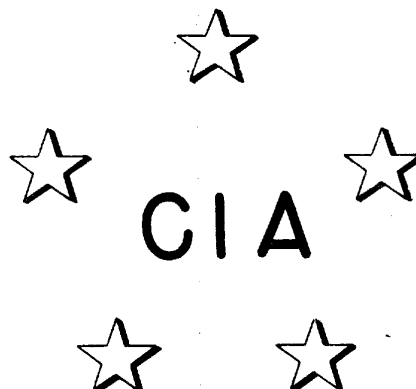


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Number 59

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"Avtomobil'naya Promyshlennost'" (Automotive Industry)* Cards 21, 22, 79	No 10	Oct 1947
"Azerbaydzhanskoye Neftyanoye Khozyaystvo" (Azerbaydzhan Petroleum Economy)* Cards 27, 84	Vol XXVI No 10	Oct 1947
"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 28, 54-57, 78	Vol LV No 6	Feb 1947
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"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 2, 3, 23-26, 38-42, 65-70, 80-82, 88-91	Vol LVI No 8	Jun 1947
"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 4-9, 31-37, 71-77, 92	Vol LVI No 9	Jun 1947
"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 10-16, 30, 43-53, 83, 86, 87	Vol LVII No 3	Jul 1947
"Energeticheskiy Byulleten'" (Power Engineering Bulletin) Cards 17-20, 85	No 2	Feb 1947

NOTE

In indexing these abstracts the following guides are used: MEDICINE - "Quarterly Cumulative Index Medicus," American Medical Association; CHEMISTRY - "Chemical Abstracts Subject Index," American Chemical Society; GENERAL - "Subject Headings for Technical Libraries," US Department of Commerce, Office of Technical Services.

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REPRODUCED

USSR/Chem - Potassium Ferrocyanide Mar 1947
Chem - Dehydration -

"Occurrence of Dehydration in Concentrated Solutions of Potassium Ferrocyanide Near the Saturation Point," V. I. Nikolayev, S. I. Gozdek, G. N. Bondarenko, T. I. Arnol'd, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 7

Gives details of study of concentrated water solutions of K_4FeCy_6 within limits of concentrations of 38.00%-41.6%, and results of experiments in graphs and tables. Submitted by Academician I. I. Chernyayev, 17 Sep 1946.

FDB

59T1

USSR/Chem - Cyclopentane Derivatives Jun 1947
Chem - Synthesis

"Synthesis and Properties of Stereoisomeric 1, 2, and 3-Trimethylcyclopentanes," Academician B. A. Kazanskiy, A. B. Koperina, M. I. Batuyev, Inst Org Chem, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Detailed discussion to the effect that the spectra of all three hydrocarbons are essentially different, and that the latter are to be referred to the cyclopentane series.

FDB

59T2

USSR/Chem - Zinc Solutions Jun 1947
Chem - Alkali

"Mechanism of Solution of Zinc in Alkali," Yu. A. Klyachko, Ye. I. Bleshchunova, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Discussion, with tables and formulas, leads to conclusion that zinc can be dissolved in alkali without water if oxidizing agent is added to the system; the mechanism is then chemical; instead of the usual oxidizer, water may be added to the alkaline alcohol solutions, which in themselves do not act upon zinc, but in that case no less than 70% (molecular) water is required; electrochemical treatment is not necessary.

FDB

59T3

USSR/Chem - Platinum Compounds Jun 1947
Chem - Dichroism

"Dichroism of $Pt(NH_3)_2Cl_2OH$," G. B. Bokiy, Inst Cryst; G. I. Distler, Inst Gen and Inorg Chem imeni N. S. Kurnakov, Acad Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9

Describes study of the synthesized and inorganic complex salt with composition $Pt(NH_3)_2Cl_2OH$ having certain extremely unusual optical qualities. Submitted by Academician S. I. Vavilov, 22 Dec 1946.

FDB

59T4

USSR/Chem - Perchlorates Jun 1947
Chem - Synthesis, Electro

"Dependence of Anode Process During Electrosynthesis of Perchlorates From Cation of Starting Electrolyte," N. A. Izgaryshev, Corr Mem, Acad Sci USSR; M. G. Khachatryan, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9

Describes experiments showing that bichromate added to solution to protect perchlorate from deoxidization in the cathode also has effect on the anode process.

FDB

59T5

USSR/Chem - Catalysts Jun 1947
Chem - Chem Industry

"Fundamental Questions of the Genesis of Skeleton Catalysts," S. L. Lel'chuk, Inst Org Chem, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9

Describes experiments showing that catalysts with highly fusible components are found in high-frequency furnaces, and that catalyst with increased activity can be obtained by rapid cooling of the alloy. Submitted by Academician A. A. Balandin, 3 Dec 1946.

FDB

59T6

USSR/Chem - Hypohalides, Ethyl Jun 1947
Chem - 1,3-Butadiene

"Order of Addition of Ethylhypohalides to Divinyl," A. A. Petrov, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9

Author examined action on divinyl in ethanol of benzosulfodichloramide, benzosulfodibromamide, tertiary butylhypochlorite, alcoholate and chloride, iodine and oxide of mercury, in which number of parent substances in all cases permitted detection of about 2% of isomeric 1,4 halogenether. Submitted by Academician A. E. Arbuzov, 30 Nov 1946.

FDB

59T7

USSR/Chem - Resorcinol Jun 1947
Chem - Sodium Sulfites

"Reaction of Resorcinol With Bisulfite," V. N. Ufimtsev, Inst Malaria, Med Parasitol, and Helminthol, Acad Med Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9

Study of chemical reaction where association of three molecules of bisulfite to one molecule of resorcinol occurs when heating resorcinol with water solution of sodium bisulfite. Submitted by Academician A. Ye. Poray-Koshits, 18 Nov 1946.

FDB

59T8

RESTRICTED	FDB Periodical Abstracts Scientific No 59	RESTRICTED
USSR/Chem - Elec Moments Chem - Pyridine Jun 1947 "Dipole Moments of Pyridine and Nicotine Derivatives," S. B. Bardenshteyn; Ya. K. Syrkin, Corr Mem, Acad Sci USSR, Inst Fine Chem Tech imeni M. V. Lomonosov, Moscow, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9 Authors tabulate results of number of calculations of dipole moments of series of compounds by the heterodyne method. Express thanks to Ya. L. Gol'dfarb, A. F. Vomba, and V. G. Vasil'yev for aid and advice. FDB 59T9	USSR/Chem - Aluminum Halides Chem - Alkyl Halides Jul 1947 "Complex Compounds of Alkyl Halide and Aluminum Halides," V. V. Korshak, N. N. Lebedev, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 To clarify nature and structure of complex compounds of alkyl halide and aluminum halides, authors studied ultraviolet spectra of absorption of solutions of aluminum bromide in ethyl bromide, and measured heat of solution of aluminum bromide in alkyl iodide. Submitted by Academician A. N. Hesmeyanov, 4 Jan 1947. FDB 59T10	
USSR/Chem - Glass Chem - Neodymium Jul 1947 "Spectral Absorption by Glass Painted With Neodymium," T. I. Veynberg, State Opt Inst, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Describes experiments to establish character and degree of change in absorption spectra of neodymium during changes in composition of glass. Submitted by Academician I. V. Grebenshchikov, 13 Dec 1946. FDB 59T11	USSR/Chem - Acetaldehyde Chem - Oxidation Jul 1947 "Kinetics of the Oxidation of Acetaldehyde in the Gas Phase," Z. K. Mayzus, N. M. Emanuel', Lab of Kinetics of Intermediate Products, Inst Chem Phys, Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Describes research and experiments on reaction of oxidation of acetaldehyde confirming the peroxide theory on processes of slow oxidation established by A. N. Bakh. Submitted by Academician N. N. Semenov, 30 Dec 1946. FDB 59T12	
USSR/Chem - Palladium Chem - Platinum Jul 1947 "Reduction of Palladium and Platinum by Hydrogen Under Pressure," V. G. Tronev, V. N. Chulkov, High Pressure Lab, Inst Gen and Inorg Chem imeni N. Kh. Kurnakov, Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Study of reduction of complex compounds of metals of platinum group in water solutions by hydrogen at atmospheric and increased pressures. Submitted by Academician I. I. Chernyayev, 4 Jan 1947. FDB 59T13	USSR/Chem - Platinum Compounds Chem - Extraction Jul 1947 "On Extraction of Alkyl Compounds of Platinum From Zeise's Salt," A. Gel'man, Inst Gen and Inorg Chem imeni N. S. Kurnakov, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Describes experiments in which trimethyliodide is obtained by the interaction of Zeise's potassium salt in ether-benzol solution. Number of derivatives of trimethyliodide also obtained, confirming its identity with products of Pope and Peachey. Submitted by Academician I. I. Chernyayev, 5 Jan 1947. FDB 59T14	
USSR/Chem - Catalysts Chem - Tantalum Compounds Jul 1947 "Catalytic Properties of Tantalum and Niobium Pentoxides," Academician A. A. Balandin, N. P. Yegorova, Moscow State U imeni M. V. Lomonosov, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Analyzes in detail catalytic activities of Nb and Ta and their compounds, including experimental data and results. Thanks V. I. Spitsin, A. V. Lapitskiy and U. P. Simanov for assistance. FDB 59T15	USSR/Elec Turbogenerators Systems, Elec Jul 1947 "Unexcited Turbogenerator in Asynchronous System," I. S. Bruk, Corr Mem Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Case observed in practice where turbogenerators with disconnected excitation windings continued to work as asynchronous generators and supplied grid with substantial amount of power. Experiments made to investigate this matter. FDB 59T16	

RESTRICTED	FDB Periodical Abstracts Scientific No 59	RESTRICTED
USSR/Elec Mach - Construction Mach - Design "Scientific and Research Session on Electric Machinery," K. A. Chefranov, GlavVostokEnergoNeft, 1½ pp "Energeticheskiy Byull" No 2 Section on Electric Machinery of the All-Union Scientific Engineering and Technical Council of Engineers held meeting in Leningrad, 25-30 Nov 1946, at which were discussed various questions on electric machinery. Proceedings are of interest to specialists connected with construction, designing and operation of electric FDB USSR/Elec (Contd) machinery. More than 300 delegates attended. Reports proceedings very generally and mentions some of the more important theses and articles submitted. FDB	Feb 1947 	

RESTRICTED	FDB Periodical Abstracts Scientific No 59	RESTRICTED	
USSR/Engin Automobile Industry Machines, Metal Cutting "Accelerated Metal Cutting in Automotive Construction," I. M. Neklepavev, Gorkiy Auto Plant imeni Molotov, 2 1/2 pp "Avto Prom" No 10 Discusses general notations, objectives of accelerated cutting (in automobile construction), rules on cut- ting, basic requirements of the machine tool, and of equipment. Includes nomogram for calculating rules of cutting during milling. IC 59T22	Oct 1947	USSR/Engin (Contd) their durability, and general conclusions. In- cludes 15 graphs, 2 tables, and diagram of plan of stand for testing gear shifts. LC 59T21	Oct 1947
USSR/Engin Refractory Materials Zirconium "Zirconium High Temperature Refractory Formed From Mariupol Zirconium Concentrate," I. I. Kitaygorodskiy, Moscow Chem Tech Inst imeni Mendeleev, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8 Discussion with tabular operating data to the effect that this material is suitable for refractory pur- poses without addition of any plastificators or ce- menting agents. FDB 59T23	Jun 1947	USSR/Geol Salts "Geologic and Geographic Conditions of Formation and Dissolution of Salt Beds," A. I. Dzents- Litovskiy, All-Union Sci Res Geol Inst and All- Union Sci Res Inst of Halurgy, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8 Gives conditions favorable to formation of beds from ancient lagoons, such as location between watertight strata, and location below drainage and erosion level. FDB 59T24	Jun 1947
USSR/Geol Minerals Chlorine Compounds "Chlorites From Timan Diabases," D. P. Serdyuchenko, V. P. Kolesnikov, Inst Geol Sci, Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8 Certain chlorites taken from dark green diabases of the Ukhta region in South Timan, subjected to optical and chemical analysis and compared with samples from North Timan. Brief discussion with table of data from analysis. FDB 59T25	Jun 1947	USSR/Geol Rock Formation "Galenite in Sedimentary Deposits of Verkhne- Chusovskoy Gorodok," A. A. Aprodova, 2 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8 Very brief discussion with tabular data on samples and their sources. FDB 59T26	Jun 1947
USSR/Geol Prospecting Sampling "Questions Concerning Core Sampling by Electrical Means in Current Five-Year Plan," B. K. Babazade, 1 p "Az Neft Khoz" Vol XXVI, No 10 Effectiveness of geological research depends on devel- opment and improvement of methods of core sampling by electrical means. Discusses deficiencies of current methods. Electrometric research is not advanced be- cause of certain basic problems yet unsolved. Recent government decision calls for organization of Geo- physical Trust including a Central Scientific Research Laboratory to be incorporated into AzNeft's system. IC 59T27	Oct 1947	USSR/Geol Fossils "Westphalian Flora of Saratov Carbon," S. I. Savinov, 2 1/2 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 6 Describes research by author on material selected from specimens taken from mine in Teplovka. Tabulates results. Submitted by Academician P. I. Stepanov, 9 Oct 1946. FDB 59T28	Feb 1947

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USSR/Geol Fossils Mar 1947		USSR/Geol Stratification Jul 1947			
"Choristites of the Bashkir Layers in the Saratov-Volga Region," S. I. Savinov, T. I. Fedorova, 2 pp		"Age of Paleozoic Layers in Fergana Mountain Range," V. N. Ognev, A. D. Miklukho-Maklay, 2 pp			
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 7		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3			
Short summary of results of monographic research of brachypod fauna in the Bashkir layers by paleontologists of the Scientific Research Laboratory, Nizhne-Volga Geological Research Trust. Submitted by Academician P. I. Stepanov, 9 Oct 1946.		Describes geological research on heavy Paleozoic deposits found in the central and southeast parts of the Fergana Mountain Range and lists results for various areas. Submitted by Academician D. V. Nalivkin, 2 Feb 1947.			
FDB	59T29	FDB	59T30		
USSR/Geol Rock Formation Jun 1947		USSR/Math - Inequality Jun 1947			
"Structure of the Luavrite Complex of Rocks in Lovozerskiy Mountain Range," V. I. Gerasimovskiy, 3½ pp		"On Single Inequality," I. P. Natanson, 2 pp			
"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9			
Tabular representation of stratigraphical cross section of the luavrite complex found in the Lovozerskiy Mountain Range which occupies 650 sq km of Kola Peninsula. Submitted by Academician D. S. Belyankin, 13 Jan 1947.		Demonstrates following theorem: Let an integrated function $f(x)$ in the segment $[a, b]$ be given, possessing the property that			
		$\sup \left\{ \frac{1}{n} \left \int_a^{a+nh} f(x) dx \right \right\} = M < +\infty \quad (0 < h \leq b-a)$			
		Whatever the nonnegative diminishing function $g(x)$ may be, fixed and integrated in $[a, b]$, the integral			
		$\int_a^b f(x)g(x)dx$ exists (improper at $x = a$) and the			
FDB	59T31	FDB	59T32		
USSR/Math - Approximation Math - Functions, Anal Jun 1947		USSR/Math - Inequality (Contd) Jun 1947			
"On Optimum Approximation of Analytical Functions by Means of Integral Functions of Finite Steps," Academician S. N. Bernshteyn, 4 pp		inequality is true:			
"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9		$\int_a^b f(x)g(x)dx \leq M \int_a^b g(x)dx.$			
Author amplifies previous article on subject approximation in "Doklady Akademii Nauk SSSR" Vol LIV, No 6, 1946.		Submitted by Academician V. I. Smirnov.			
FDB	59T33	FDB	59T32		
USSR/Math - Topology Jun 1947		USSR/Math - Function Theory Jun 1947			
"Topological Formula of Incidence," I. M. Gul', 4 pp		"On Approximation of N-Almost-Periodic Functions by Means of Finite Trigonometrical Sums," B. Levitan, 4 pp			
"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9			
Presents the multivalent, continuous reflection T of closed orientable manifolds M^n in itself, with each point of which, $m \in M^n$, certain point number is set in correspondence. Submitted by Academician A. N. Kolmogorov.		Following results reached: If continuous function $f(x)$ satisfies $ f(x+\tau) - f(x) < \epsilon$ ($1 \leq x \leq N$) and $\mu(\epsilon, p) = O + \lambda(p)$ (where $\lambda(p) \rightarrow 0$ as $p \rightarrow 0$ and $\epsilon >$ arbitrary constant) and if for all λ_r and arbitrary successive U_n ($U_n \rightarrow \infty$ as $n \rightarrow \infty$)			
		$\lim_{n \rightarrow \infty} \frac{1}{2U_n} \int_{-U_n}^{U_n} f(t) e^{-i\lambda_r t} dt = 0 \quad (r = 1, 2, \dots)$			
FDB	59T34	FDB	59T35		

RESTRICTED	FDB Periodical Abstracts Scientific No 59	RESTRICTED
USSR/Math - Probability Jun 1947 "The Problem on the Extrapolation of Stationary Random Processes," P. A. Kozulyayev, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9 To any moment of time t let there correspond random quantity $x(t)$, the mathematical expectancy of which is $M\{x(t)\} = 0$, and whose second moments $B(\tau) = M\{x(t+\tau)x(t)\}$ depend only upon the difference of the time τ . Then, the random function determines the unidimensional random process, "stationary in the broad sense." As is known, the second moments of such process satisfy the equation FDB 59T36	USSR/Math - Function Theory (Contd) Jun 1947 then $f(x)$ is identically equal to zero. Submitted by Academician S. N. Bernshteyn. FDB 59T35	
USSR/Math - Probability (Contd) Jun 1947 $B(\tau) = bR(\tau)$ where $R(\tau)$ is the correlation function and $b = M\{x^2(t)\} = \text{constant}$. Submitted by Academician A. N. Kolmogorov. FDB 59T36	USSR/Math - Function Theory Jun 1947 "On Completeness of System of Functions," V. A. Ditkin, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9 Following proved: In order that system of functions $f_n(x) = f(x+\lambda)$ be complete in space L^2_k ($n \geq 1$) it is necessary and sufficient that there does not exist a point ξ_0 , in the neighborhood of which $F(\xi) = e^{-\xi}(a_0 + a_1\xi + \dots + a_{n-1}\xi^{n-1})$ where $F(\xi) = \text{integral (between negative infinity$ FDB 59T37	
USSR/Math - Numbers Jun 1947 "On Magnitude of Number of Connected Components of the A-Number," P. S. Novikov, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8 Discusses subject number when situated in n -dimensional Euclidean or Hilbertian space. It is demonstrated that number of such components may be either finite, calculable, or continuous, and therefore the problem is completely solved for any indicated case. Submitted by Academician N. N. Luzin. FDB 59T38	USSR/Math - Function Theory (Contd) Jun 1947 and positive infinity) of $\frac{f(x)}{(1+ix)^n} e^{ix\xi} dx$. Submitted by Academician A. N. Kolmogorov. FDB 59T37	
USSR/Math - Probability Jun 1947 "Calculation of the Final Probabilities for Branching Random Processes," Academician A. N. Kolmogorov, B. A. Savost'yanov, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8 Article follows that in "Doklady Akademii Nauk SSSR" Vol LVI, No 1, 1947. Demonstration is for discrete scheme homogeneous in t (t runs through only the numbers 1, 2, 3, ... and may be treated as "number generation" of fraction in question). In accordance with this, $P_k^a(t) = P(T_k - a_1T_1t, \dots + a_nT_nt)$ is the probability that fraction of type T_k will give through t , generated by a_1, a_2, \dots, a_n , fractions of type T_1, T_2, \dots, T_n . FDB 59T39	USSR/Math - Series Jun 1947 "Generalization of Theorems of Dirichlet and Adamar to Quasi-Uniformly Convergent Series," I. E. Ogiyevetskiy, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8 Generalization of theorems of Dedekind, Abel, Dirichlet, etc., devoted to the criteria of convergent series of the form: $\sum v_1(x)v_2(x)$ (in the interval $1 = 0$ to infinity). Submitted by Academician S. N. Bernshteyn. FDB 59T40	

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USSR/Math - Probability Jun 1947 "Some Critical Theorems on Theory of Branching Random Processes," A. M. Yaglom, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8 Develops theory of branching random processes under following assumptions: (a) there exists one unique type of the objectives $T_1 = T$; (b) all probabilities of transition depend only upon the differences of the times $t = t_2 - t_1$ (homogeneous in time); (c) probabilities are investigated only for integral values of t . Submitted by Academician A. N. Kolmogorov. FDB 59T41	USSR/Math - Operational Theory Jun 1947 "On Theorem of the Differential Operator," V. A. Ditkin, Math Inst imeni Steklov, Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8 Let U_t^a and U_t^b be one-parameter groups of unitary operators in Hilbert space and let A and B be Hermitian operators corresponding to them; that is $U_t^a = \exp(itA)$ and $U_t^b = \exp(itB)$. It is assumed, for all t and T , that $U_t^a U_T^b = \exp(-iT)x U_t^b U_T^a$. For this case, Ditkin demonstrates that: $AF(B)f = F(B)AftiF'(B)f$, with the condition that $F(x)$ is differentiable, the operators $F(B)$ and FDB 59T42	
USSR/Math - Function Theory Jul 1947 "On Normal Systems of Lyapunov," Yu. S. Bogdanov, Leningrad State U, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Discusses functions $F(t)$ having following properties: $\lim F(t) \cdot \exp(kt) = \text{positive infinity}$ $F^*(t) = \text{negative or positive infinity}$ depending upon how k varies (where $F^*(t)$ is characteristic number of $F(t)$ and t approaches infinity). Submitted by Academician V. I. Smirnov. FDB 59T43	USSR/Math - Operational Theory (Contd) Jun 1947 $F'(B)$ are finite and fe_n are regions of location for operator A . Submitted by Academician A. N. Kolmogorov. FDB 59T42	
USSR/Math - Topology Jul 1947 "Theorem on the Expansion of Homotopy," Shi Dzen Khu, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Study of problem often met in topological investigations: Given topological spaces X and Y , closed quantity X_0 contained in Y , and certain reflection $F(x)$ contained in Y , it is asked if there is any partial homotopy $F_t(x)$ contained in Y (t between 0 and 1) such that F_t^1 equals F . Submitted by Academician A. N. Kolmogorov. FDB 59T44	USSR/Math - Topology Jul 1947 "Rectilineal Polygons," V. A. Yefremovich, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Studies relationships among various characteristics of polygon drawn on surface, such as point, line, face, etc. Submitted by Academician A. N. Kolmogorov. FDB 59T45	
USSR/Math - Topology Jul 1947 "Homological Relationships in Regions of Duality," Aleksandrov, Corr Mem, Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Describes in general the properties of subject duality. FDB 59T46	USSR/Math - Transformations Math - Integrals Jul 1947 "On Formulas for Treating One Class of Integral Transformations," T. A. Rozet, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3 Study of integral transformations employing the kernel, $K(x,y)$, of Watson. Transformation is of the form: $g(x) = \text{integral of } k(x,y) F(y)dy$ (from 0 to infinity). Submitted by Academician V. I. Smirnov. FDB 59T47	

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USSR/Math - Equations, Differential Jul 1947		USSR/Med - Eyes Med - Optics Jul 1947			
"On Concept of Indicatrix in Theory of Differential Equations With Partial Derivatives," V. Vagner, 4 pp		"Dark Adaptation of Center and Periphery of the Retina for the Green and Ultraviolet Section of the Spectra," N. I. Pinegin, State Opt Inst, 4 pp			
"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3			
Demonstrates that if system of differential equations with partial derivatives of the first order exists in involution, their contravariant indicatrices at each point possess $r = (s_1 + s_2 + \dots + s_L)$ - measure contact with a general - measure subplane of Grassman, passing through this point ($L = 1, 2, \dots, m - 1$). Submitted by Academician I. G. Petrovsk.		Describes experiments conducted during research on dark adaptation of bulbs and rods for mercury lines of 365 and 546 m μ . Submitted by Academician S. I. Vavilov, 3 May 1947.			
FDE	59T48	FDB	59T49		
USSR/Med - Nematoda Med - Taxonomy Jul 1947		USSR/Med - Marine Animals Med - Life, Duration Jul 1947			
"Reorganization of Systematism of Nematoda of the Anguillulidae Baylis and Daubney 1926 Family," T. S. Skarbilovich, All-Union Inst Helminthol imeni K. I. Skryabin, 2 pp		"New Ideas in Evaluation of State of Reserves of Commercial Whales," S. E. Kleynenberg, Inst Evolutionary Morph imeni Academician A. N. Severtsov, Acad Sci USSR, 3 pp			
"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3			
Makes attempt to clarify confused and incomplete systematism of Nematoda in plants and in bodies of insects and lists subfamilies of Anguillulidae and others. Submitted by Academician K. I. Skryabin, 10 Feb 1947.		Evolves method of evaluation which can be used not only to determine age and composition of the reserve, but also to establish the span of life of a whale. Submitted by Academician I. I. Shmal'-gauzen, 11 Feb 1947.			
FDB	59T50	FDB	59T51		
USSR/Med - Plants Med - Spermatozoa Jul 1947		USSR/Med - Marine Organisms Med - Plankton Jul 1947			
"Conduct of Spermatozoa in the Pollen Tube in Crepis," Ye. N. Gerasimova-Navashina, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 4 pp		"Observation of Destruction of Copepoda With Mass Accumulation of Diatoms," A. P. Kusmorskaya, 2 pp			
"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3			
Author submits study, made with aid of acetic carmine with alcohol-acetic mixture as preliminary fixation, of action of spermatozoa in pollen tubes in the stem of Crepis Capilaris (n 3) and C. Tectorum (n 4). Submitted by Academician N. A. Maksimov, 26 Apr 1947.		Describes, with aid of diagrams, how mass accumulation of diatoms eventually leads to destruction of Copepoda due to their inability to feed and move actively. Submitted by Academician P. P. Shirshov, 18 Jan 1947.			
FDB	59T52	FDB	59T53		
USSR/Med - Cells Med - Protozoa Feb 1947		USSR/Med - Flies Med - Evolution Feb 1947			
"Ribonucleinic Acid in Life Cycle of Protozoic Cell," Ye. Shubnikova, Moscow State U imeni M. V. Lomonosov, 3 1/2 pp		"Migration and Inherent Selection in Experiment With Natural Populations," N. P. Dubinin, Corr Mem, Acad Sci USSR; G. G. Tinyakov, 4 pp			
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 6		"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 6			
Describes experiments showing that ribonucleinic acid is concentrated in conjugants around the macronuclei and micronuclei, and remains in same position for duration of entire process of conjugation and after it. Submitted by Academician L. A. Orbeli, 8 Aug 1946.		Shows that the fact that population inversions in Drosophila Funbris have an ecological value leads to possibility of experimental research on evolutionary processes in populations.			
FDB	59T54	FDB	59T55		

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FDB Periodical Abstracts Scientific No 59

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USSR/Med - Plants Med - Nutrition	Feb 1947	USSR/Med - Nematoda Med - Deer	Feb 1947
"Some Data on the Mechanism of Mineral Nutrition of Plants by Adsorbed Ions," Ya. M. Gellerman, Lab of Plant Physiol and Microbiol, Agr Acad imeni K. A. Timiryazev, 3½ pp		"New Thread Worm From Subcutaneous Cellular Tissue of Crimean Deer," D. P. Rukhlyadev, Crimean State Game Reserve and All-Union Inst of Helminthol imeni K. I. Skryabin	
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 6		"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 6	
Reveals data permitting author to advance hypothesis on the great value of organic surface-active root and bacterial secretions to the mineral nutrition of plants. Submitted by Academician A. A. Rikhter, 3 Aug 1946.		Describes hitherto unknown Nematoda discovered in subcutaneous tissue of deer shot in Crimean State Game Reserve. It differs from Parafilaria Bovicola Tubangui 1934 in structure of its head, and in several other respects. Submitted by Academician K. I. Skryabin, 14 Aug 1946.	
FDB	59T56	FDB	59T57
USSR/Med - Plants Geog	Mar 1947	USSR/Med - Plants Geog	Mar 1947
"Turbellaria Triclada of Eastern Siberia and Baykal Area," A. Ya. Bazikalova, Baykal Limnological Sta, Acad Sci USSR, 2 pp		"Faunistic Boundaries of Gobi in Mongolia," A. G. Bannikov, Inst Evolutionary Morph imeni A. N. Severtsov, Acad Sci USSR, 3½ pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 7		"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 7	
Discusses triclada fauna of Siberia, and describes expansion of growth of Planaria sibirica Sab. and Planaria Coaretata in Baykal area. Submitted by Academician I. I. Shmal'gauzen, 19 Aug 1946.		Detailed study of penetration of Gobi fauna to the North includes diagrammatic plan of faunistic boundaries of Gobi, and shows that boundaries now differ substantially from former ones. Submitted by Academician I. I. Shmal'gauzen, 28 Aug 1946.	
FDB	59T58	FDB	59T59
USSR/Med - Flies Med - Heredity, Mech	Mar 1947	USSR/Med - Alfalfa Med - Bacteria	Mar 1947
"Effect of Cancerogenic Substances on Mutation Process in Drosophila Melanogaster," R. P. Martynova, B. A. Kirsanov, Lab of Hereditability of Cancer, Cent Sci Res Oncological Inst, Ministry of Health RSFSR, 2½ pp		"Withering of Alfalfa and Decay of Its Roots," N. D. Sigryanskaya, 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 7		"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 7	
Describes experiments designed to promote more systematic study of mutagenic action of cancerogenic substances and conditions that facilitate penetration of these substances into chromosomes. Submitted by Academician I. I. Shmal'gauzen, 6 Oct 1946.		Describes research resulting in conclusion that cause of withering of alfalfa may be representative soil types of fungus Fusarium and certain other bacteria. Submitted by Academician A. A. Rikhter, 24 Sep 1946.	
FDB	59T60	FDB	59T61
USSR/Med - Fish Med - Thyroxin	Mar 1947	USSR/Med - Flies Med - Heredity, Mech	Mar 1947
"Effect of Thyroxin on Postembryonic Development of Sturgeon (Acipenser Stellatus)," N. L. Gerbil'skiy, M. G. Zaks, 3½ pp		"Inversions in Confines of Ecological Breeds of Drosophila Funebris," N. P. Dubinin, Corr Mem, Acad Sci USSR; G. G. Tinyakov, 2 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 7		"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 7	
Studies role of thyroxin as factor in metamorphosis of amphibians and value of thyroxin as regulator of processes of postembryonic development in other vertebrates. Submitted by Academician L. A. Orbelli, 30 Aug 1946.		Studies question of boundaries between divergent breeds and subspecies possessing ability to interbreed, for various types of Drosophila Funebris.	
FDB	59T62	FDB	59T63

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FDB Periodical Abstracts Scientific No 59

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USSR/Med - Parasitocides Mar 1947
Chem - Acridine, Chloro-Amino Derivatives

"Chemical Structure and Parasitocidal Action: III, Chloro-Isomers of Meso-Alkylamino-Acridine and Their Antimalarial Properties," K. S. Topchiev, A. F. Bekhli, Inst Malaria and Med Parasitol, Acad Med Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 7

Having established monotypic activities of certain groups, authors carried out research on corresponding group of nonmethoxyl chloro-isomeric meso-deriving acridine. Submitted by Academician A. N. Nesmeyanov, 12 Sep 1946.

FDB 59T64

USSR/Med - Plants Jun 1947
Rubber Plants

"Experimentally Obtained Tetraploids of Kok-Saghyz," V. Poddubnaya-Arnol'di, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Presents 16 drawings of subject, with short discussion to the effect that anatomical and physiological characteristics, as well as morphological, cytological, and embryological characteristics are more variable in tetraploids than diploids.

FDB 59T66

USSR/Med - Eyes Jun 1947
Med - Optics

"Sensitivity of the Eye in the Red and Infrared Spectrum in Twilight," N. I. Pinegin, State Opt Inst, Leningrad, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Gives curves to show that under conditions of adaptation to darkness and with a stimulus of 20" the crepuscular apparatus of the retina shows great sensitivity in the red and infrared spectrum, in all proving to be only 2-2.5 times less than sensitivity of the fovea. S. I. Vavilov gave his advice in the work.

FDB 59T68

USSR/Med - Flies Jun 1947
Med - Heredity, Mech

"Ecology of the Town and Distribution of Inversions in the Drosophila Funbris," N. P. Dubinin, G. G. Tinyakov, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Very brief discussion, with full tabular representation of samples taken in Moscow, Baku, Tbilisi, etc., giving number of normal and inversion cases of various types.

FDB 59T70

USSR/Med - Morphology Jun 1947

"Development of the Wing in Calliptamus Italicus L.," T. S. Ivanova, Inst Evolutionary Morph imeni Severtsova, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Short, detailed discussion with two microphotographs and three diagrams. Three facts discovered: 1) explained the process leading to the turning of the wing; 2) established that the wing frame is formed at the end of the fifth growth; 3) established dual nature of the second axillary.

FDB 59T65

USSR/Med - Plants Jun 1947
Med - Hormones, Effects

"Role of Heteroauxin in Plant's Formative and Growth Processes," G. M. Psarev, Rostov-on-Don State U imeni Molotov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Discussion, with tabular data, concluding that artificial injection of phytohormones in plant by vacuum infiltration has number of advantages; it permits injecting hormones in plant of any growth.

FDB 59T67

USSR/Med - Flies Jun 1947
Med - Respiration

"Cutaneous Respiration of the Earth Larvae of the Long-Legged Fly, Genus Tipula (Tipulidae, Diptera-Nematocera) and Respiration Conditions in the Soil," M. S. Gilyarov, Lab Morph of Invertebrates, Inst Evolutionary Morph imeni A. N. Severtsova, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Very detailed discussion, with diagrams and tabular data, on intensity of respiration.

FDB 59T69

USSR/Med - Plants Jun 1947
Rubber Plants

"Effect of Decapitation on Growth and Development of Kok-Saghyz and Krym-Saghyz," G. Kh. Molotkovskiy, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9

Describes experiments showing that the root mass of certain rubber plants almost double their size after plant has been decapitated. Submitted by Academician A. A. Rikhter, 10 Nov 1946.

FDB 59T71

RESTRICTED	FDB Periodical Abstracts Scientific No 59	RESTRICTED	
USSR/Med - Eyes Med - Optics "Darkness Adaptation of the Rod Apparatus of the Retina for the Red Band of the Spectrum," N. I. Pinegin, State Opt Inst, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9 Describes experiments showing that the rod apparatus showed both light and dark adaption to red rays and possessed its own sensitivity in the red band of the spectrum. Submitted by Academician S. I. Vavilov, 30 Mar 1947.	Jun 1947	USSR/Med - Blood Med - Blood Vessels "Particular Form of Movement of Liquid (Blood) in Healthy Blood Vessels," G. G. Yaure, Black Sea Hydrophys Sta, Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9 Describes experiments leading to conclusion that columnar movement of blood in unaltered blood vessels is achieved by gliding, but that the movement itself becomes nonviscous. Submitted by Academician V. V. Shuleykin, 6 Jan 1947.	Jun 1947
FDB	59T72	FDB	59T73
USSR/Med - Chromosomes Med - Hybrids "Different Colorings of Parental Chromosomes in Hybrids," Ya. Ye. Ellengorn, Lab Remote Hybridization, Acad Sci USSR, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9 Describes experiments designed to establish rational method of distinguishing parental chromosomes in hybrids according to their different colorings. Submitted by Academician N. Y. Tsitsin, 18 Jan 1947.	Jun 1947	USSR/Med - Embryol Med - Chorda Dorsalis "Formative Effect of Notochord on Development of Parachordals in Amphibians," T. A. Bednyakova, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9 Describes experiments and research designed to clarify role of forward end of the notochord in development of parachordals. Submitted by Academician I. I. Shmal'gauzen, 23 Jan 1947.	Jun 1947
FDB	59T74	FDB	59T75
USSR/Med - Flies Med - Heredity, Mech "Climate and Dispersion in Area of a Form of Drosophila Funebris F.," N. P. Dubinin, Corr Mem, Acad Sci USSR; G. G. Tinyakov, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9 Study of inversion of the Drosophila Funebris F. for the following places: Arkhangel'sk, Ivanovo, Kalinin, Moscow, Noginsk, Michurinsk, Saratov, Baku, Tbilisi, Erevan.	Jun 1947	USSR/Metals Aluminum Oxide Layers "Determination of Thickness of Natural Oxide Layer on Aluminum," I. V. Krotov, T. M. Khachadurova, Moscow Aviation Inst imeni S. Ordzhonikidze, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9 Investigates qualities and, in particular, thickness of passivating layers on metals from the standpoint of understanding the processes of metal corrosion and the means of increasing resistance of metal to corrosion. Submitted by Academician V. A. Kist'yakovskiy, 9 Dec 1946.	Jun 1947
FDB	59T76	FDB	59T77
USSR/Metals Rare Earths Chem - Thiosulfates "Thiosulfate Compounds of Some Rare Earth Elements," D. I. Ryabchikov, V. Ya. Volkova, Lab Geochem Problems imeni V. I. Vernadskiy, Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 6 Describes experiments using thiosulfate compounds of certain rare earth metals obtained by the interaction of dissolved salts of these metals with sodium thiosulfate. Submitted by Academician V. G. Khlopkin, 23 Jul 1946.	Feb 1947	USSR/Metals Heat - Treatment Steel "Concerning the Speed With Which Steel Is Heated During Thermal Treatment," G. G. Mukhina, Moscow Plant "Ressora" "Avto Prom" No 10 Covers research in possibilities of decreasing the heating time during hardening, in possibilities of decreasing the heating time during tempering and conclusions from experiments conducted along this line. Technical charts and graphs.	Oct 1947
FDB	59T78	IC	59T79

RESTRICTED	FDB Periodical Abstracts Scientific No 59	RESTRICTED
USSR/Metals Tin Zinc	Jun 1947	USSR/Minerals Silicates Thallium
"Effect of Deformation Rate and Temperature on the Amount of Adsorption Decrease of Stability of Monocrystals of Tin and Zinc," Academician V. I. Likhtman, P. A. Rebinder, L. P. Yanova, Dispersion Systems Dept, Inst Phys Chem, Acad Sci USSR, 4 pp		"Locating Thallium in Silicates of the Earth's Crust," I. P. Novokhatskiy, S. K. Kalinin, Kazakh Affiliate of Acad Sci USSR, 3 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8
Discussion with graphs leads to conclusion that value of the adsorption effect of decreased deformations (decrease of stability) of crystals is determined by the deformation system.		Brief discussion with extensive tabular presentation of various minerals, their location, and percentages of thallium contained in them.
FDB	59T80	FDB
USSR/Minerals Crystals, Quartz Corrosion	Jun 1947	USSR/Nuclear Phys - Quantum Theory Chem - Bonds
"Corrosion of Colorless and Colored Quartz Crystals," G. G. Lemmleyn, Inst Cryst, Acad Sci USSR, 4 pp		"Quantum Mechanical Calculation of Polarizability of the Hydrogen Molecule," M. G. Veselov, M. N. Adamov, Phys Inst, Leningrad State U, 4 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3
Discussion illustrated with two microphotos leads to conclusion that corrosion rates, and series of other changes of properties in quartz crystals exposed to light, support the supposition about the disintegration of metastable solid solution as the basic cause of the change of properties of colored quartz.		Describes experimental results showing that approximate wave functions used at present in the theory of chemical bonds are able to provide satisfactory clarification of polarized qualities of separate bond. Submitted by Academician V. A. Fok, 5 Feb 1947.
FDB	59T82	FDB
USSR/Petroleum Industry Oil Regions	Oct 1947	USSR/Petroleum Industry Fuel - Conservation
"Outlook on Oil Capacity of the Monoclinical Fold Along the Caspian Sea," A. M. Polaudin, 1 1/2 pp		"Establishment of Specific Norms for Energy Utilization," V. Ya. Myagkov, 2 pp
"Az Neft Khoz" Vol XXVI, No 10		"Energeticheskiy Byull" No 2
Discusses dimensions of Maykop layers, especially the density of the III stratum. Chart shows distribution of wells. Gives sampling characteristics of peripheral wells and those wells located in other places. Potential benzine content of Maykop oil is as high as 30% and output of light products (svetllyy producty) is as high as 60%.		Crude-oil-processing plants are the greatest producers of energy, but they are also the greatest utilizers of all types of energy. Sum total of energy used contains unbelievable amount of wasted energy. Discusses percentage of energy wasted at refinery referring to various operations: burning of petroleum 45.4%, cracking 46.93%, combined processing 45.90%, reforming 43.13%, etc.
IC	59T84	FDB
USSR/Phys Sound - Focusing Sound - Measurements	Jul 1947	USSR/Phys Light - Scattering Optics
"Experimental Investigation of Focusing Properties of Zonal Plates," A. A. Karpacheva, L. D. Rozenberg, B. D. Tartakovskiy, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 3 pp		"Certain New Laws for Complex Scattering of Light," Academician V. V. Shuleykin, Black Sea Hydrophys Sta, Acad Sci USSR, 4 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 3
With aid of apparatus previously described in "Doklady Akademii Nauk SSSR" Vol LIV, p 399, 1946, authors carried out further research on focusing properties of zonal plates with the sound source located on the		Describes experiments by authors in which several new laws governing the scattering of light of high orders are derived.
FDB	59T86	FDB
		59T87

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USSR/Phys (Contd)

Jul 1947

main optical axis. Submitted by Academician S. I. Vavilov, 25 Jan 1947.

FDB

59T86

USSR/Phys
Films

Jun 1947

Antimony Compounds

"Films of Antimony and Cesium Compounds," P. G. Borzyak, Inst Phys, Acad Sci Ukrainian SSR, Kiev, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Brief discussion with graphs, showing that only modification I, as can be seen from the spectral characteristic, of the normal photocathode film has high sensitivity; photoeffect from other modifications in the visible part of the spectrum has no value, though investigation in the ultraviolet field is of interest.

FDB

59T89

USSR/Phys

Jun 1947

Magnetization
Molecular Structures

"Vibrations of Molecular Magnets," V. K. Arkad'ev, Corr Mem, Acad Sci, Phys Inst, Moscow State U imeni M. V. Lomonosov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Largely mathematical discussion, illustrated with formulas and graphs, to the effect that magnetization in the field of sound frequencies is maintained by magnetic viscosity, while in the case of shortest radio waves magnetization is maintained by inertia of the magnetic dipoles.

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List of Abbreviations
used in FDB Periodical Abstracts

ID	Intelligence Division Library
AMC	Air Documents Division, Air Materiel Command
ST	Reference Division, State Department
BM	Bureau of Mines, Department of Interior
BS	National Bureau of Standards
SI	Smithsonian Institution
LC	Library of Congress
FDB	Foreign Documents Branch, CIA
COM	Department of Commerce
AF	A-2 Library, USAF

USSR/Phys

Jun 1947

Phosphors
Chem - Lead

"Zinc Sulfide Phosphors Containing Lead," A. A. Cherepnev, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

Discussion, illustrated with diagrams and table, to the effect that the presence of isomorphous formations of ZnS with PbS and certain properties of luminous bodies containing Cd, Mn, and Ag reveal possibilities of the use of lead to obtain phosphors on the basis of ZnS.

FDB

59T88

USSR/Phys

Jun 1947

Gas Flow
Air Flow

"Law of Reverse Reactions in Flow of Real Gas," L. A. Vulis, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 8

In previous articles, author investigated the effect of various physical reactions upon the movement of thermodynamically ideal gas. Here, he shows mathematically that the main results retain their validity in any kind of conditional equation.

FDB

59T90

USSR/Phys

Jun 1947

Cathodes, Photoelec
Cesium

"Optical and Photoelectric Properties of Antimony-Cesium Cathodes," N. D. Morgulis, P. G. Borzyak, B. I. Dyatlovitskaya, Inst Phys, Acad Sci Ukrainian SSR, Kiev, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 9

Discusses certain aspects of preliminary report, recently published by the authors, on calculations of optical and photoelectric qualities of Sb-Cs cathodes which were made in 1941. Submitted by Academician S. I. Vavilov, 26 Dec 1946.

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List of Abbreviations
used in FDB Periodical Abstracts

ID	Intelligence Division Library
AMC	Air Documents Division, Air Materiel Command
ST	Reference Division, State Department
BM	Bureau of Mines, Department of Interior
BS	National Bureau of Standards
SI	Smithsonian Institution
LC	Library of Congress
FDB	Foreign Documents Branch, CIA
COM	Department of Commerce
AF	A-2 Library, USAF